



MADRID

inter.noise 2019

June 16 - 19

NOISE CONTROL FOR A BETTER ENVIRONMENT

A New Method For Measuring In Situ Noise Abatement Performance Of Urban Noise Reducing Devices: Numerical Investigation And Experimental Results

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ABSTRACT

Following a set of works regarding urban noise reducing devices (also referred to as low-height noise barriers) in which the interest of such solutions to improve the sound quality in urban areas has been shown, the French technical group CNEA-U - affiliated to the French commission of standardization of noise barriers - was created to accompany the development of new products as well as experimental implementations in urban areas. As part the technical group activities, a new method for measuring the in-situ noise abatement performance of urban devices adapted to the urban context has been developed. The purpose of the method is to provide an in-situ indicator of the noise reduction effect of a product with as little dependence as possible on environmental effects. To reach this purpose, some parameters (including sample size) of the method have first been studied and optimized. Then the method has been tested experimentally with several prototypes in a controlled environment in Heyrieux, France. In this work, the framework of the method is presented, and results of numerical investigations and first experimental tests are presented and discussed.